

## High Power Activity: NASA's Deep Impact Mission

## Decision Making

### DECISION-MAKING PROCESS

#### KEY POINTS

1. Help students understand how important it is to generate clear criteria that accurately identify the conditions that the selected alternatives need to meet when making a decision.
2. Hold students accountable for rigorously applying criteria to alternatives.
3. Vary the way that you use decision making to maximize its potential for encouraging students to use the knowledge they are gaining in a unit of study.

#### DEFINITION OF DECISION MAKING:

*The process of generating and applying criteria to select from, among seemingly equal alternatives.*

Using the table on page 4:

1. Identify a decision you plan to make and the alternatives you are considering. (See sample below and on page 3: How do you choose to spend your free time during the weekend?)
2. Identify the criteria that you consider important (i.e., "Affordable," "Convenient," "Fun," etc.)
3. Assign each criterion an importance score. (Using a 1-3 scale, each student will assign a value to reflect how important each criterion is to him/her. For example, one student may assign the "Convenient" criterion a "1" and another could give it a "3.")
4. Determine the extent to which each alternative possesses each criterion. (Using a 1-3 scale again, score each alternative according to the degree to which it possesses each criterion. For example, a 20-mile mountain-bike ride may score a "1" as not at all relaxing, while hanging out at home and reading magazines may score a "3.")
5. Multiply the criterion scores by the alternative scores to determine which alternative has the highest total points. (For example, the criterion of "Affordable" ranked a "3" for very important, and the alternative "Go to the movie theater" scored a "2" for somewhat affordable. Multiply "3" by "2" to get one set of points, "6.")
6. Based on your reaction to the selected alternative, determine if you want to change importance scores, and add or drop criteria. (After totaling all of the points, you may decide that you want to change the criterion score for "Relaxing" from a "2" to a "3.")

**SAMPLE:**

**Alternatives**

*To what degree do the alternatives possess the criteria?*  
 1 = not at all or just a little bit    2 = somewhat    3 = totally possesses criterion  
 In the matrix below, multiply the criteria values by the alternative scores.

<u><b>Criteria</b></u> <small>How important is each criterion? 1 = not important 2 = somewhat important 3 = very important</small>	<b>Movie Theater</b>	<b>Mountain-Bike Ride</b>	<b>Skate-board</b>	<b>Read magazines</b>	<b>Bowl &amp; Eat Lunch</b>	<b>Play Basketball</b>
<b>Affordable</b> (3)	3x 2 6	3x 3 9	3x 3 9	3x 3 9	3x 1 3	3x 3 9

*Determine level of importance to you.* (Arrow points to the '3' in the 'Affordable' criterion cell)

*The multiplicand (the "3" for affordability) is the same for each alternative.* (Arrow points to the '3' in the 'Movie Theater' cell for 'Affordable')

*The multiplier represents to what degree the activity possesses the criterion.* (Arrow points to the '2' in the 'Movie Theater' cell for 'Affordable')

*The product of the two multipliers.* (Arrow points to the '6' in the 'Movie Theater' cell for 'Affordable')

## TEACHER RESOURCES

*Klinger & Vaughn (1999)* Promoting Reading Comprehension, Learning, and English Acquisition through Collaborative Strategic Reading (CSR).

*Marzano, Pickering, et. al. (2001)* Dimensions of Learning Teacher's Manual (2<sup>nd</sup> Edition) Association for Supervision and Curriculum Development (ASCD) Alexandria, VA.

*Swanson & De La Paz (1998)* Teaching Effective Comprehension Strategies to Students with Learning and Reading Disabilities.

**Decision to Consider:** On Saturday, you spent several hours at the public library in preparation for the science research project due next week. You feel you have made excellent progress and deserve to take a break from research on Sunday. How will you choose to spend your free time?

Criteria	Alternatives					
	Go to the movie theater	Ride a 20-mile mountain-bike loop	Skateboard at the new public park	Hang out and read magazines	Bowl and eat lunch with some friends	Play basketball with neighbor
Affordable (3)	3x 2	3x 3	3x 3	3x 3	3x 1	3x 3
	6	9	9	9	3	9
Convenient (1)	1x 2	1x 1	1x 2	1x 3	1x 2	1x 3
	2	1	2	3	2	3
Fun (3)	3x 2	3x 3	3x 3	3x 1	3x 3	3x 2
	6	9	9	3	9	6
Relaxing (2)	2x 3	2x 1	2x 2	2x 3	2x 2	2x 2
	6	2	4	6	4	4
TOTALS	20	21	24	21	18	22

